

# Cotton Gins and Presses

## Reading Industrial Artifacts at the Magnolia Plantation

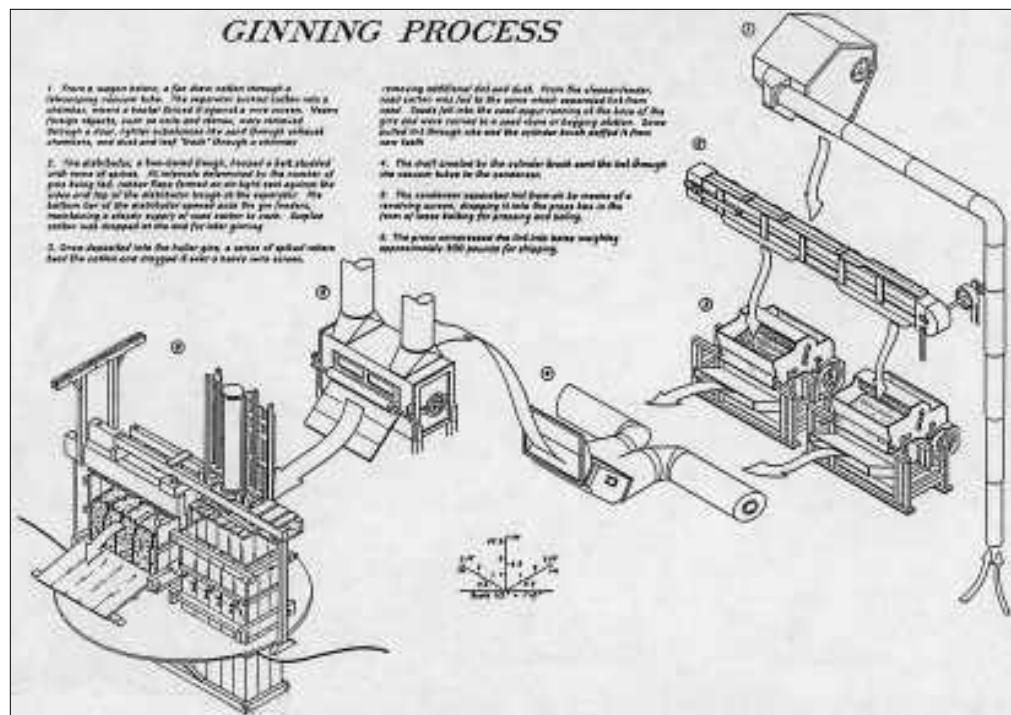
**D**efunct industrial sites present unique challenges for documenting their construction and operation. Over time, buildings are modified for different purposes; and technologies are replaced or adapted. Because records are rarely maintained on outdated equipment and structures, the artifacts become important sources of information. However, they can also present hazy and contradictory evidence of how industrial sites functioned, as shown by the recent documentation of the gin house and equipment at Magnolia Plantation near Natchitoches, Louisiana, by the Historic American Engineering Record (HAER).

During most of the 19th and early-20th centuries, the Magnolia Plantation was among the largest cotton producers in Natchitoches Parish, Louisiana. Founded by Ambrose Lecomte II in the 1830s, the plantation eventually comprised more than 7,800 acres and, by 1859, produced over 1,100 bales of cotton annually. Since a tornado damaged the gin house and the steam engine shed in 1939, Magnolia has sent cotton to a commercial gin for processing.<sup>1</sup>

One of many structures on the site, the gin house contains cotton processing equipment used to clean the lint of seed and trash in preparation for baling and shipping. The construction date and original configuration of the gin house are still unknown because no documents about the structure exist. An 1850s map depicts a gin house at approximately the same location, but the present buildings size suggests a later construction date.<sup>2</sup> A large structure, especially in the context of southern agriculture, the building appears to have been constructed at once rather than added to over a period of years.

Nevertheless, the plantation owners extensively modified the gin house. The first-level floor in the wood screw-press area was a later addition, possibly upgrading a dirt floor for hay storage when cotton processing ended in 1939. The use of the area in front of the two-gin stand on the second level is not so clear. Gin position and joist pockets suggest the presence of flooring; but existing floor joists are also notched in a way consistent with the presence of yet another press—perhaps of the transitional metal screw variety. The floor in front of the hydraulic press reveals the likely location of the ramp used to transport baled cotton from the second to the first level. However, there is evidence of other uses for this area that is not easily explained, such as the difference in height between second levels in the north and south ends of the building. In addition, a seed storage area and lint room probably existed somewhere near the buildings center. Finally, a new roof, installed to protect the structure, obliterated traces of cotton processing equipment supports.

The age, origins, and method of operation of the two-and-a-half-story wood screw-press are mysteries. Style, timber size, hardware and joinery suggest antebellum construction; and the National Register nomination dates it as c. 1830. Mechanical engineer George Lowry suggested in 1898 that this type of press was prevalent from 1810 until the introduction of power screw-presses between 1840 and 1860 and the steam or hydraulic press in 1870. Yet, this technology appears particularly durable. According to Karen Gerhardt Britton, a recent authority on cotton ginning practices, Samuel A. Goodman Jr. purchased a



nearly-identical press for his Tyler, Texas, farm in 1875. The press clearly predates the structure; and their seamless integration suggests that the press was built into the gin house when the structure was erected, probably sometime in the late-19th century.<sup>3</sup>

Little remains of the power source for the gin house equipment, particularly for gins predating existing equipment. Plantations the size of Magnolia could have easily used steam engines; evidence of steam-powered gins exists for plantations in other parts of the South. Steam engines

were generally housed in separate buildings or, at Magnolia, in a shed behind the gin house; but the type and size of the steam engine once mounted on the footers at the rear of the house are unknown.<sup>4</sup> The separator, distributor, gins, and condenser were likely driven directly by the steam engine, with power transmitted via a system of shafts and belts.<sup>5</sup> The steam engine probably powered a hydraulic pump to run the press. The extant drive system consists of a main shaft, six wood belt wheels manufactured by the Reeves Pulley Company of Columbus, Indiana, and two metal

Eric DeLony

## What Is HAER?

Last of the programs created as part of the “new preservation” in the late 1960s, the Historic American Engineering Record (HAER) was established to expand heritage memory to include the achievements of engineers, industrialists, and laborers. “New preservation” was begun in the 1960s by a group of historians, architects, and preservationists concerned with the alarming rate at which architectural landmarks and the scenic and historic quality of American cities were being destroyed by highways and urban renewal in the name of “progress.” One of the results was the National Historic Preservation Act of 1966 and creation of the Office of Archeology and Historic Preservation within the National Park Service, now the Associate Directorship, Cultural Resources Stewardship and Partnerships. Since 1969, HAER has worked to ensure that engineering structures and industrial workplaces are recorded, and when possible, preserved along with historic architecture and other worthy resources.

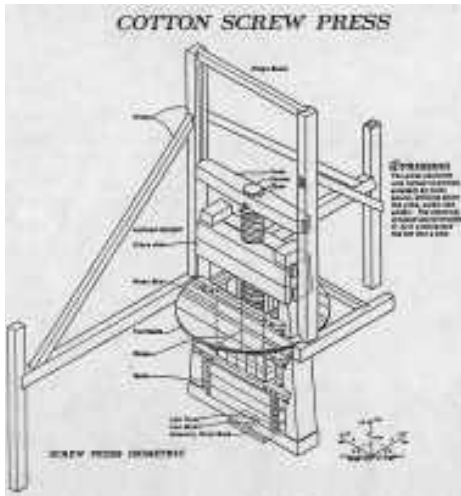
Preservation through documentation has been the *modus operandi* of HAER as it has created a national archive of America’s industrial, engineering, and technological achievements. Some of the sites recorded serve as the foundation for subsequent preservation efforts that transform communities and the way people think of the industrial workplace. Steel mills, factories, foundries, and the canal, road, and rail infrastructure now are beginning to be thoughtfully regarded and preserved with new insights. Through its federal authority, national standards, summer recording program, and Library of Congress archives, HAER has helped instill a national ethic to recognize the oft-forgotten contributions of engineers, industrialists, and laborers.

Since 1969 over 4,900 sites, structures, and objects have been recorded with over 53,000 photographs, 500 large-format color transparencies, 42,000 data pages, and 3,000 sheets of measured and interpretive drawings

have been transmitted to the Library of Congress. Summer recording teams have been the heart of the HAER program. Since the program’s inception 28 years ago, over 1,000 young people have had the opportunity of a “hands-on” experience documenting the nation’s industrial, engineering, and architectural heritage every summer. Student hires remain the core of the summer documentation program, and the fundamental day-to-day philosophy of HAER recording remains the multi-disciplinary team approach with a site-specific focus on the physical remains of engineering and industrial heritage. Documentation also is produced through the mitigatory documentation program administered by the Service Center Offices of the National Park Service. E. Blaine Cliver serves as Chief, HABS/HAER. Recording projects for the summer of 1997 included:

Allegheny Oil Heritage Recording Project, Allegheny National Forest, Pennsylvania  
Continental Eagle Gin Company, Prattville, Alabama  
Hull-Oakes Lumber Company, Monroe, Oregon  
John A. Roebling Sons, Wire Rope Manufacturing Plant, Roebling, New Jersey  
Kalaupapa Water Collection System, Kalaupapa National Historical Park, Molokai, Hawaii  
Magnolia Plantation Cotton Gins & Presses, Natchitoches, Louisiana  
Mariscal Quicksilver Mine & Reduction Works, Big Bend National Park, Texas  
National Park Service Roads & Bridges Recording Program: Blue Ridge Parkway, Blowing Rock, North Carolina & Vinton, Virginia  
Natchez Trace Parkway, Mississippi/Tennessee  
Vicksburg National Military Park, Vicksburg, Mississippi  
Pennsylvania Historic Bridges-I, Harrisburg, Pennsylvania  
Southern Textile Project, Huntsville & Valley, Alabama, LaGrange, Georgia  
Steam Tug *Hercules*, San Francisco Maritime National Historical Park

*Eric DeLony is chief of the Historic American Engineering Record.*



wheels. Several other wood wheels are distributed around the barn.

Likewise, the power source for the wood screw-press and earlier gins is indeterminate. A similar press at the Goodman ranch at Tyler, Texas, now at Texas Tech in Lubbock, Texas, was mule-powered.<sup>6</sup> Other contemporary presses used draft animals; and it is likely, given the relative technological sophistica-

tion of the remaining screw-press, that the same was true of Magnolia. Yet, anomalies suggest another possible scenario. Unlike surviving contemporary presses, the Magnolia press has no prominent buzzard wings to which draft animals would have been attached. It would have been possible, if not very unusual, for the press to have been powered by humans. It is in near-perfect balance, with a low-friction metal pivot point requiring minimum power to rotate it and draw down the platen. Wear marks on the rotating slanted legs suggest that rope may have been wrapped around the inclined support members, possibly to attach a cross brace for a draft animal or a bar for humans.

Unlike both the gin house and the wood screw-press, the turn-of-the-century cotton ginning system at Magnolia is described in a series of patents in company literature provided by Tommy Brown of Continental Eagle Gin Company (successor to the Continental Gin Company), still at Prattville, Alabama, and by Thomas Oliver, who reconstructed a similar system at Old Alabama Town in Montgomery, Alabama. Beginning in the 1880s, Texan Robert Munger designed a series of pneumatic and mechanical processes that completely reorganized the hundred-year-old tradition of plantation ginning.<sup>7</sup> He sought remedies for the frequency and size of gin-house fires, the speed with which they spread, the trash still contained in seed cotton as it entered the gin, the impurities cast into the gin-house air, and the labor and time resulting from delays and congestion in moving seed cotton from delivery wagons to gin. By stabilizing the supply of cotton to the gins and dramatically increasing baling capacity with the development of the dual-box press, Munger's innovations transformed ginning from a set of discrete steps to a continuous process.

Most components of Munger's system are present at Magnolia, although the cotton suction apparatus is almost completely disassembled. The pneumatic elevator includes the fan currently out-

side the first level, various flue ducts randomly distributed about the gin house, and the vacuum box—presently detached and lying under the condenser, but originally attached to the distributor above the gin stand. The mechanical cotton distributor, still in place above the gin-stands, was designed and patented by Munger and manufactured by Continental Gin Company of Prattville, Alabama.<sup>8</sup>

The Magnolia Plantation gin house is a compendium of once state-of-the-art cotton processing technologies representing vastly different eras of southern history. The juxtaposition of equipment, some still in its original placement but some randomly strewn about, precludes a quick reading of its operation and seemingly defies confident explanation. The need to study and evaluate this equipment, the search for new sources to explain its nuances and contradictions, and the compelling desire to find it in its many historical contexts suggest that the richness of the resource lies precisely in the challenges it presents.

#### Notes

- <sup>1</sup> Part of Magnolia, including the gin house, is now in the Cane River Creole National Heritage Area.
- <sup>2</sup> The map was furnished by Dr. Ann Malone, who generously shared her work on other aspects of Magnolia's history.
- <sup>3</sup> National Register Nomination, continuation sheet 1, item number 7, page 2; George A. Lowry, *Ginning and Baling Cotton*, from 1798 to 1898, Transactions, *American Society of Mechanical Engineers*, vol. XIX (June, 1898), p. 819; Karen Gerhardt Britton, *Bale o' Cotton*, College Station, Texas, 1992, p. 48.
- <sup>4</sup> According to Ambrose Hertzog, in an interview with the author on September 17, 1996, the building housing a steam engine was destroyed in 1939, and the engine was then sold.
- <sup>5</sup> The absence of clutch assemblies and the presence of the drive pulley mounted directly on the line shaft, as on the contemporary gin outfit at Old Alabama Town, Montgomery, suggest that the Magnolia outfit was a direct connected gin. Thomas Oliver, *A Narrative History of Cotton in Alabama, Montgomery, AL*, Landmarks Foundation of Montgomery, Inc., 1992, p. 90.
- <sup>6</sup> Britton, *Bale o' Cotton*, p. 48.
- <sup>7</sup> Britton, *Bale o' Cotton*, pp. 58-9. Thomas Oliver describes the operation of the Munger outfit in substantial detail in *A Narrative History*, pp. 65-93.
- <sup>8</sup> Robert S. Munger, U.S. Patent No. 308,790, December 2, 1884.

*Richard O'Connor is a historian with the Historic American Engineering Record.*